

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please amend the claims as follows:

Claim 1 (Currently Amended): An ethylene interpolymer ~~composition~~ having the following properties:

- i) a number average molecular weight (M_n) ~~of~~ from 1,000 to 9,000; and
- ii) a Brookfield Viscosity (measured at 149°C /300°F) ~~of~~ from 500 to 9,000 cP; and wherein the interpolymer comprises a high weight average molecular weight polymer component (M_{wH}) and a low weight average molecular weight polymer component (M_{wL}), and wherein the ratio M_{wH}/M_{wL} is from about 1.5 to about 20
wherein, when one or more tackifiers are added, in an amount of from 15 to 40
percent by weight (based on the combined weight of interpolymer composition and
tackifier), to said ethylene interpolymer composition, then the resulting adhesive
composition has:
 - a) ~~Brookfield Viscosity (measured at 177°C/350°F) of from 400 to 2,000 cP;~~
 - b) ~~Peel Adhesion Failure Temperature (PAFT) of greater than or equal to 110°F; and~~
 - c) ~~Shear Adhesion Failure Temperature (SAFT) of greater than or equal to 140°F.~~

Claim 2 (Currently Amended): The ethylene interpolymer ~~composition~~ of Claim 1, wherein interpolymer having has iii) a density ~~of~~ from 0.88 to 1.06 g/cm³.

Claim 3 (Currently Amended): The ethylene interpolymer ~~composition~~ of Claim 2, wherein the interpolymer is derived from olefinic comonomer reactants, comprising at least ethylene and styrene, and has such composition having iii) a density ~~of~~ from 0.931 to 1.06 g/cm³.

Claim 4 (Currently Amended): The ethylene interpolymer of Claim 2, wherein the interpolymer has having iii) a density of from 0.88 to 0.93 g/cm³.

Claim 5 (Currently Amended): The ethylene interpolymer ~~composition~~ of Claim 4, wherein the interpolymer having has the following properties:

i) a density of from 0.89 to 0.92 g/cm³;
ii) a number average molecular weight (Mn) of from 1250 to 7,000; and
iii) a Brookfield Viscosity (measured at 149°C/300°F) of from 1,000 to 6,000 cP;
and wherein, when the one or more tackifiers are added, in an amount of from 20 to 35 percent by weight (based on the combined weight of interpolymer ~~composition~~ and tackifier), to said ethylene interpolymer ~~composition~~, then the resulting ~~adhesive~~ composition has the following properties:
a) a Brookfield Viscosity (measured at 177°C/350°F) of from 500 to 1,400 cP;
b) a Peel Adhesion Failure Temperature (PAFT) of greater than, or equal to, 115°F; and
c) a Shear Adhesion Failure Temperature (SAFT) of greater than, or equal to, 150°F; and
d) 100% paper tear from 35 to 140°F.

Claim 6 (Currently Amended): The ethylene interpolymer ~~composition~~ of Claim 4, wherein the interpolymer having has the following properties:

i) a density of from 0.895 to 0.915 g/cm³;
ii) a number average molecular weight (Mn) of from 1500 to 6,000; and
iii) a Brookfield Viscosity (measured at 149°C/300°F) of from 1,500 to 5,000 cP;
and wherein, when the one or more tackifiers are added, in an amount of from 20 to 35 percent by weight (based on the combined weight of interpolymer ~~composition~~ and tackifier), to said ethylene interpolymer ~~composition~~, then the resulting ~~adhesive~~ composition has the following properties:
a) a Brookfield Viscosity (measured at 177°C/350°F) of from 750 to 1,200 cP;
b) a Peel Adhesion Failure Temperature (PAFT) of greater than, or equal to, 120°F; and

- c) a Shear Adhesion Failure Temperature (SAFT) of greater than, or equal to, 170°F; and
- d) a 100% paper tear from 0 to 140°F.

Claim 7 (Currently Amended): The ethylene interpolymer ~~composition~~ of Claim 4, wherein said interpolymer is a copolymer of ethylene/propylene, ethylene/1-butene, ethylene/4-methyl-1-pentene, ethylene/1-pentene, ethylene/1-hexene or ethylene/1-octene.

Claim 8 (Canceled)

Claim 9 (Currently Amended): A process of making an ethylene interpolymer ~~composition~~; said process comprising:

- i) contacting one or more olefinic monomers in the presence of at least two catalysts, one having a reactivity ratio r_1^H , and the other a reactivity ratio r_1^L , and
- ii) effectuating the polymerization of the olefinic monomers in a reactor, to obtain an olefin polymer, and
wherein ~~iii)~~ each of r_1^H and r_1^L is from 1 to 200, and r_1^H/r_1^L , is from 0.03 to 30, and/or

wherein iv) one catalyst is capable of producing a first polymer, with a high molecular weight (M_{wH}), from the monomers, under selected polymerization conditions, and the other catalyst is capable of producing a second polymer with, relative to the first polymer, a low molecular weight (M_{wL}), from the same monomers, under substantially the same polymerization conditions, and wherein where M_{wH}/M_{wL} is from 1.5 4 to 20.

Claim 10 (Currently Amended): The process of Claim 9, wherein the catalysts are single site catalysts.

Claim 11 (Currently Amended): The process of Claim 9₂ wherein the catalysts are metallocene catalysts.

Claim 12 (Currently Amended): The process of Claim 11₂ wherein at least one of the metallocene catalysts is a constrained geometry catalyst.

Claim 13 (Currently Amended): The process of Claim 12₂ wherein said at least one constrained geometry catalyst is (C₅Me₄SiMe₂N^tBu)Ti(η⁴-1,3-pentadiene).

Claim 14 (Currently Amended): The process of Claim 9₂ wherein the catalysts are (C₅Me₄SiMe₂N^tBu)Ti(η⁴-1,3-pentadiene) and (1H-cyclopenta[1]-phenanthrene-2-yl)dimethyl(t-butylamido) silanetitanium dimethyl.

Claim 15 (Currently Amended): The process of Claim 9₂ wherein the catalysts are (C₅Me₄SiMe₂N^tBu)ZrMe₂ and (C₅Me₄SiMe₂N^tBu)Ti(η⁴-1,3-pentadiene).

Claim 16 (Currently Amended): The process of Claim 9₂ wherein the catalysts are [N-(1,1-dimethylethyl)-1,1-dimethyl-1-[1,2,3,4,5-η]-3,4-diphenyl-2,4-cyclopentadienyl-1-yl]silanaminato(2)-κN]- dimethyl-titanium and (C₅Me₄SiMe₂N^tBu)Ti(η⁴-1,3-pentadiene).

Claim 17 (Currently Amended): The process of Claim 9₂ wherein the catalysts are [N-(1,1-dimethylethyl)-1,1-dimethyl-1-[1,2,3,4,5-η]-3,4-diphenyl-2,4-cyclopentadienyl-1-yl]silanaminato(2)-κN]- dimethyl-titanium and (1H-cyclopenta[1]-phenanthrene-2-yl)dimethyl (t-butylamido) silanetitanium dimethyl.

Claim 18 (Currently Amended): The An ethylene interpolymer composition of Claim 1₂ produced by a process[[],] comprising:

a) contacting one or more olefinic monomers in the presence of at least a high molecular weight catalyst having a reactivity ratio r_1^H , and at least a low molecular weight catalyst having a reactivity ratio r_1^L , in a single reactor; and

b) effectuating the polymerization of the olefinic monomers in the reactor, to obtain an olefin polymer; and

wherein \Rightarrow each of r_1^H and r_1^L is from about 1 to about 200, and r_1^H/r_1^L [[,]] is from between 0.03 to 30; and/or

wherein \Rightarrow the high molecular weight catalyst is capable of producing a polymer with a high molecular weight M_{wH} from the monomers, under selected polymerization conditions, and the low molecular weight catalyst is capable of producing a polymer with a low molecular weight M_{wL} from the same monomers, under substantially the same polymerization conditions, and wherein where M_{wH}/M_{wL} is from 1.5 to 20.

Claim 19 (Currently Amended): The ethylene interpolymer ~~composition~~ of Claim 1, wherein the interpolymer contains the residue of at least two catalysts, a first catalyst having a reactivity ratio r_1^H , and a second catalyst having a reactivity ratio r_1^L , and wherein each of r_1^H and r_1^L independently, is a number from 1 to 200, and r_1^H/r_1^L is a number from 0.03 to 30.

Claim 20 (Currently Amended): The ethylene interpolymer ~~composition~~ of Claim 19, ~~characterized by having a~~ wherein the ratio r_1^H/r_1^L ~~that~~ is a number greater than 1.

Claim 21 (New): The ethylene interpolymer of Claim 1, wherein the interpolymer has a number average molecular weight from 2,000 to 9,000.

Claim 22 (New): The ethylene interpolymer of Claim 1, wherein the interpolymer as a Brookfield Viscosity (measured at 149°C (300°F)) from 1,500 to 9,000 cP.

Claim 23 (New): The ethylene interpolymer of Claim 1, wherein the ratio, M_{wH}/M_{wL} , is from about 2 to about 10.

Claim 24 (New): The ethylene interpolymer of Claim 1, wherein the interpolymer has a molecular weight distribution (M_w/M_n) from about 2 to about 20.

Claim 25 (New): The ethylene interpolymer of Claim 1, wherein, when one or more tackifiers are added, in an amount of from 15 to 40 percent, by weight (based on the combined weight of interpolymer and tackifier), to said ethylene interpolymer, the resulting composition has the following properties:

- a) a Brookfield Viscosity (measured at 177°C/350°F) from 400 to 2,000 cP;
- b) a Peel Adhesion Failure Temperature (PAFT) of greater than, or equal to, 110°F; and
- c) a Shear Adhesion Failure Temperature (SAFT) of greater than, or equal to, 140°F.